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Numerical investigation of the January, 24-26, 2007 coronal mass ejections

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On January, 24, 2007, one of the first Coronal Mass Ejections (CMEs) detected by STEREO left the Sun at a speed of about 700 km/s and was followed 16.5 hours later by a second ejection with a speed of about 1300 km/s. A single bright front was detected by the Heliospheric Imager 2 instrument on January 26. Because of a 16-hour data gap in the Heliospheric Imager 1's coverage, it cannot be easily determined to which CME this bright front corresponds. Considering the speed difference and time delay between the two ejections, an instance of CME cannibalism in the inner heliosphere might also have happened. We undertook a compressible 3D MHD numerical investigation of these two ejections using the Space Weather Modeling Framework. By studying synthetic coronagraphic and heliospheric images and comparing them to images from the STEREO/SECCHI and HI suites, we determined whether the ejections may have interacted or not.